



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,699	09/11/2003	Fu-Jen Ko	TOP 326	4746
7590 02/06/2006			EXAMINER	
RABIN & BERDO, P.C. Suite 500 1101 14th Street, N.W. Washington, DC 20005			SCHECHTER, ANDREW M	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/659,699

Applicant(s)

KO ET AL.

Examiner

Andrew Schechter

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite "a conformal reflective electrode" which is later referred to as "the reflective electrode". In each claim, it is recited that the "reflective electrode" has both opaque and transparent portions, with the transparent portions being made of a transparent material, rather than merely being a hole in the reflective material. First, in the art, such an electrode is not called "reflective". Doing so is unnecessarily confusing, since the term "reflective electrode" is generally used to distinguish an electrode from another electrode which is transparent. The combination of the reflective and transparent electrodes could be referred to as a "pixel electrode", instead. Second, since there are two materials being deposited to make this "electrode", it is unclear in what sense it is a single electrode rather than two electrodes. Do the materials have to

Art Unit: 2871

be deposited on the same layer to be considered a single electrode? Do they have to be adjoining on the same layer? What about one directly on top of another, or one on top of another, separated by an insulator, connected through a contact hole? Do they merely have to be electrically connected? For instance, U.S. Patent No. 6,620,655 to *Ha et al.*, in Fig. 10D, shows a transparent electrode 119a and a reflective electrode 119b. Could these be considered a single "conformal reflective electrode" within the scope of the claim? It is not at all clear to the examiner what structure is required by the claims as presently written. Until these issues are resolved, the scope of the claims is unclear. For examining purposes, it is assumed that the transparent and reflective portions must at least be on the same layer and adjoining or directly on top of one another to be considered a single electrode.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 4-6, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by *Jisaki et al.*, U.S. Patent No. 6,753,939.

*Jisaki* discloses [see Fig. 4, for instance] a method of forming a transfective LCD with a wide viewing angle, comprising: providing first and second substrates, forming an insulating layer [23] having an uneven surface [in region 5] on the first substrate, forming an opening [7] in the insulating layer, the opening having a sidewall and a bottom, forming a conformal reflective electrode [24 and 25] in the opening and on part of the insulating layer, wherein the reflective electrode has an opaque portion [25] and a transparent portion [24], and in the opening the reflective electrode includes only the transparent portion [24] and is formed on the sidewall and the bottom [see Fig. 4]; forming a conformal first alignment film [26] on the reflective electrode, forming a common electrode [27] on an inner surface of the second substrate, forming a second alignment film [28] on the common electrode, and filling the space between the substrates with negative [col. 12, lines 1-4] liquid crystal molecules added with a chiral agent [col. 7, lines 22-23, col. 16, lines 39-40, etc.] to form a liquid crystal layer. Claim 1 is therefore anticipated.

When a voltage is applied as recited, an asymmetric electric field occurs at a fringe portion of the reflective electrode [this is an inherent “edge-effect” feature of parallel plate capacitors, more so due to the unevenness of the reflective electrode], so claim 4 is also anticipated. The opaque portion of the reflective electrode is aluminum [col. 11, line 27] and the transparent portion of the reflective electrode is ITO [col. 11, line 22], so claims 5 and 6 are also anticipated.

Considering claim 16, *Jisaki* discloses as discussed above that, when a voltage is applied, there is an asymmetric fringe electric field which will inherently cause a

continuous domain having different molecular alignments to be given to the liquid crystal molecules, which have added to them a chiral agent, and which have a twisting light property, and the structure increases a viewing angle of the display compared to various other displays. [The claim language is somewhat awkward and ungrammatical; this paragraph indicates the examiner's understanding of it. If the applicant has a significantly different understanding of the claim language, they should bring it to the examiner's attention immediately.]

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jisaki et al.*, U.S. Patent No. 6,753,939.

*Jisaki* discloses both using rubbing treatments and not using rubbing treatments for the two alignment films. It would have been obvious to one of ordinary skill in the art at the time of the invention to not use a rubbing treatment for the two alignment films in the device of *Jisaki*, motivated by *Jisaki's* teaching that by omitting the rubbing operation, process time is reduced and dust contamination from the rubbing is prevented [col. 17, lines 12-17].

***Allowable Subject Matter***

8. Claims 9-15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
9. Claims 2 and 3 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose the additional limitation of forming at least one symmetric protruding element on the insulating layer located around the reflective electrode. U.S. Patent No. 6,864,945 to *Fujimori et al*, for instance, discloses such a symmetric protruding element [a spacer 10 between the substrates] but it is formed on the opposite substrate and then comes into contact with the insulating layer, rather than being formed on the insulating layer. Other types of protrusions are known, but as held by the examiner in the office action of 9 March 2005, it would not be obvious to one of ordinary skill in the art at the time of the invention to incorporate them as recited on the insulating layer around the reflective electrode in the device of *Jisaki*. Claim 2 would therefore be allowable if rewritten appropriately, as would its dependent claim 3.

Similarly, the prior art does not disclose the method of claim 9, reciting the additional limitation (over claim 1) of forming a symmetric protruding element on the insulating layer located around the reflective electrode and an alignment film on it and

Art Unit: 2871

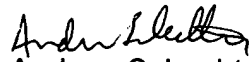
the reflective electrode. Claim 9 would therefore be allowable, as would its dependent claims 10-15.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Andrew Schechter  
Primary Examiner  
Technology Center 2800  
30 January 2006